

Title (en)  
HIGH-PRESSURE PUMP CONFIGURATION

Title (de)  
HOCHDRUCKPUMPENKONFIGURATION

Title (fr)  
CONFIGURATION DE POMPE HAUTE PRESSION

Publication  
**EP 4077940 A4 20231129 (EN)**

Application  
**EP 20902549 A 20201218**

Priority  
• US 201962951867 P 20191220  
• US 2020066134 W 20201218

Abstract (en)  
[origin: US2021190052A1] The present application provides new and innovative high-pressure fluid systems for preventing seal burning due to gas auto-ignition. The provided systems include an o-ring disposed within a seal cavity of a cup seal to decrease the dead volume in the seal cavity. By reducing the dead volume, the o-ring decreases the volume of gas that is able to accumulate and thus helps prevent the gas from auto-igniting as the gas is compressed. By preventing the gas from auto-igniting, the provided system helps prevent seal burning, which helps prevent premature cup seal failure and prevent fluid contamination.

IPC 8 full level  
**F04B 19/02** (2006.01); **F04B 19/20** (2006.01); **F04B 37/20** (2006.01); **F04B 39/04** (2006.01); **F04B 47/12** (2006.01)

CPC (source: EP KR US)  
**F04B 19/04** (2013.01 - KR US); **F04B 19/22** (2013.01 - US); **F04B 39/04** (2013.01 - EP); **F04B 39/045** (2013.01 - EP);  
**F04B 53/02** (2013.01 - EP KR US); **F04B 53/14** (2013.01 - KR US); **F04B 53/16** (2013.01 - EP); **F04B 53/162** (2013.01 - EP KR US);  
**F16J 15/3204** (2013.01 - US); **F16J 15/3236** (2013.01 - EP KR)

Citation (search report)  
• [X1] US 5269537 A 19931214 - KIESEL MARK J [US]  
• [X1] US 3711104 A 19730116 - HENRY R  
• [X1] US 2013170980 A1 20130704 - RACICOT ROBERT THOMAS [US], et al  
• [A] US 4618154 A 19861021 - FREUDENTHAL MERTON L [US]  
• See references of WO 2021127514A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**US 2021190052 A1 20210624**; CA 3164237 A1 20210624; CN 114829770 A 20220729; EP 4077940 A1 20221026; EP 4077940 A4 20231129;  
JP 2023508265 A 20230302; KR 20220113810 A 20220816; WO 2021127514 A1 20210624

DOCDB simple family (application)  
**US 202017127497 A 20201218**; CA 3164237 A 20201218; CN 202080088421 A 20201218; EP 20902549 A 20201218;  
JP 2022535946 A 20201218; KR 20227025178 A 20201218; US 2020066134 W 20201218